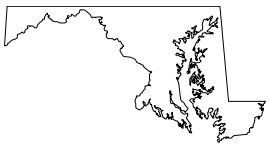
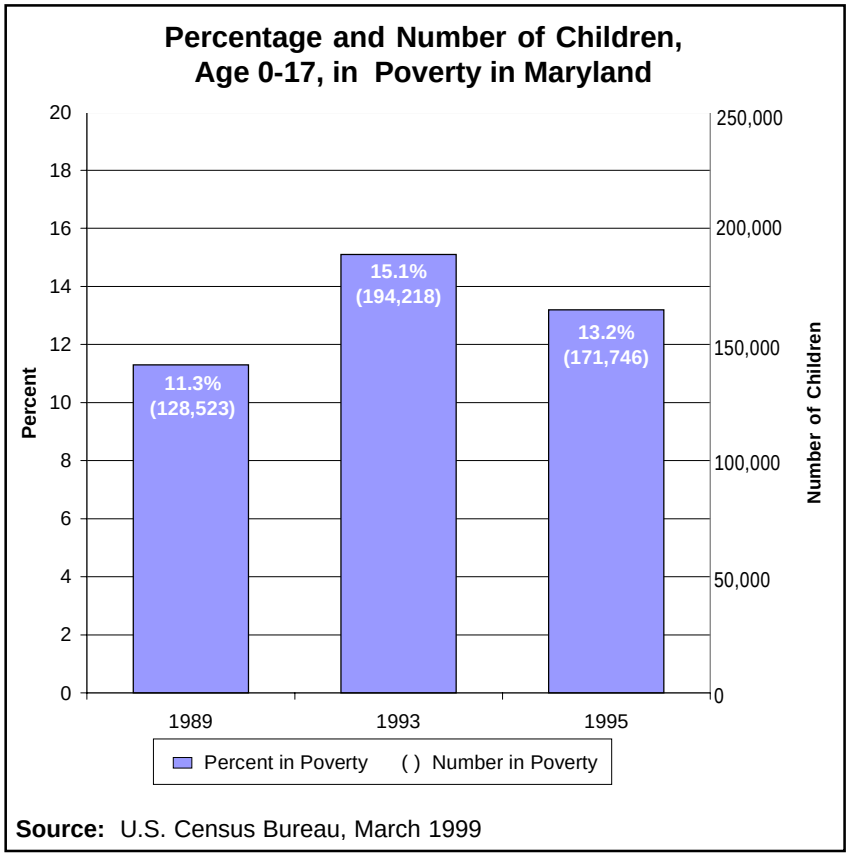


CHILD AND ADOLESCENT HEALTH

Overview

Maryland's 1.4 million children and adolescents are its most important and precious resource. During the late 1990s, several reports documented improvements in the health of Maryland's children, such as declining teen pregnancy rates and increasing immunization rates. There is every reason to expect that most of Maryland's children will grow up to become healthy and productive members of society. However, available data also suggest there are troubling trends and challenges that could block the attainment of a healthy future for many of Maryland's children and adolescents. Most at risk are children who grow up in poor, minority, and disadvantaged families and communities.

In the *1999 Kids Count Data Book* published by the Annie E. Casey Foundation, Maryland, one of the nation's wealthiest states, ranked 24th on 10 indicators of child well-being. At least 12% of Maryland's children were defined to be living in families at high risk for future failure as measured by six indicators including poverty and lack of health insurance coverage. According to the U.S. Census Bureau, 13.2% of Maryland children and adolescents, ages birth to 17 years, lived in poor families in 1995. Poverty among Maryland children and adolescents increased by 17% between 1989 and 1995. The poverty rate among African-American and Hispanic children in Maryland was two to three times the rate for white children. The consequences of child poverty are severe. Poor children are known to have higher death rates, increased chronic diseases such as asthma, and less access to health care services. Approximately 13% of Maryland children and adolescents were uninsured in 1997. Uninsured children are less likely to have access to a medical home, and less likely to use health services.



Source: U.S. Census Bureau, March 1999

Morbidity and mortality indicators provide a snapshot view of the health status of children and adolescents in Maryland. In 1997, 230 Maryland children between the ages of 1 and 14 died. Injuries, many of them preventable, were the leading cause of death for this age group followed by cancer. There were 248 deaths to Maryland adolescents ages 15 to 19 in 1997. Injuries, homicide, suicide, and motor vehicle accidents were the primary causes of these adolescent deaths. Two environmentally-linked health conditions, asthma and lead poisoning, are major causes of childhood morbidity. According to the American Academy of Pediatrics, obesity and obesity-related illnesses, such as diabetes, are increasing among children and adolescents. In addition, there are a number of psycho-social and behavioral issues that determine the health of children and adolescents. These include mental and emotional disorders, crime, violence, risky behaviors such as substance use, and sexual activity.

The following pages identify five of the major health challenges confronting Maryland children, adolescents, and families in the new millennium. It is by no means an exhaustive list, but rather meant to focus attention on several high priority problems and goals believed to be of prime importance in improving the health of Maryland's children and adolescents.

Additional health issues and concerns that are germane to improving the health of children and adolescents are covered in other sections of the HIP. These areas include Infant Mortality, Infrastructure Activities, Injuries, Mental Health Issues, Oral Health, and Substance Abuse.

Partners

Note: The following list is not exhaustive, but includes several of the major partners in Maryland working to improve the health of adolescents and children as discussed in the five modules included in this section.

American Lung Association of Maryland • Center for Maternal and Child Health, DHMH • Johns Hopkins University • Maryland Association of County Health Officers • Maryland Chapter of American Academy of Pediatrics • Maryland Department of the Environment • Maryland Department of Health and Mental Hygiene (DHMH) • Maryland Department of Housing • Maryland Department of Human Resources • Maryland Hospital Association • Maryland Local Health Departments • Maryland Local Management Boards • Maryland Medical Assistance Program, DHMH • Maryland Office of Children, Youth,and Families • Maryland State Department of Education • University of Maryland Health Systems

Focus Area 1 - Preventing Asthma

Problem

Asthma is a chronic inflammatory lung disease characterized by recurrent episodes of breathlessness, wheezing, coughing and chest tightness. According to the Centers for Disease Control and Prevention (CDC), approximately 7.3% of U.S. children were affected by asthma in 1995. Applying national prevalence rates to Maryland, an estimated 95,000 Maryland children and adolescents have asthma. National survey data indicate that the number of children with asthma in the U.S. has more than doubled in the past 15 years. Respiratory conditions including asthma are one of the highest ranked causes of pediatric hospitalizations in Maryland. The American Lung Association notes that asthma is one of the most common chronic illnesses of childhood and the number one cause of school absenteeism. In a 1996 Department of Health and Mental Hygiene (DHMH) survey to determine the special health care needs of school-aged children in Maryland, asthma was the most frequently identified health condition.

Nationally, the number of deaths, hospitalizations and emergency room visits attributed to asthma has been increasing. The incidence of new asthma cases is highest among children younger than five years of age. A number of factors are thought to have led to rising asthma prevalence, morbidity, and mortality rates. These include: limited access to quality care; lack of asthma management skills among providers, patients and families; increasing exposure to environmental allergens and irritants; and changes in diagnostic practices, medical coding, and reimbursement procedures.

Asthma Hospitalization Rates for Children ages 0-14 by Race in Maryland, 1997

Age/Race	Number of Discharges	Population*	Rate/10,000
All Children, 0-14	3,366	1,076,029	31.3
0-4	1,874	347,725	53.9
5-14	1,492	728,304	20.5
African-American Children, 0-14	2,015	339,828	59.3
0-4	1,058	112,815	93.8
5-14	957	227,013	42.2
White Children, 0-14	1,242	686,551	18.1
0-4	737	217,765	33.8
5-14	505	468,786	10.8

Source: Discharges – Unpublished data derived from the Maryland Health Services Cost Review Commission discharge file for 1997 and compiled by the DHMH Office of Public Health Assessment.

***U.S.** Census Bureau/NCI/Health Statistics, estimates, July 1, 1997.

Asthma is a controllable disease whose severity can be reduced through the use of medications and by controlling exposure to environmental triggers. The National Institutes of Health (NIH) has developed clinical practice guidelines for the diagnosis and management of asthma. Although effective preventive therapies for the control of asthma are now available, many children with asthma continue to receive episodic care from providers who are either unaware of or fail to follow NIH guidelines. The NIH has also stressed the importance of asthma education for both patients and health professionals as a means to improve health outcomes for asthma.

Determinants

Childhood asthma is a disorder with genetic predispositions and a strong allergenic component. According to the American Lung Association, approximately 75% to 80% of children with asthma have significant allergies. Major allergens include dust mites, pet dander, molds, and cockroach excrement. Exposure to passive tobacco smoke contributes to the onset of asthma early in life and is a risk factor for asthma morbidity. Children with asthma who are exposed to passive tobacco smoke have been shown to have increased emergency room visits, impaired lung function, and a higher requirement for medications. Other asthma triggers include outdoor air pollution and upper respiratory viral infections.

Health Disparities

Nationally, the death rate from asthma in African-American children is four times the rate in white children. In 1997, Maryland's asthma hospitalization rate was 32 per 10,000 for children ages birth to 14 years. The hospitalization rate for asthma in African-American children (60 per 10,000) was more than three times the rate in white children (18 per 10,000).

Asthma morbidity and mortality disproportionately affect poor children living in the inner cities of urban areas. Allergens associated with dust mites and cockroaches play important roles in asthma morbidity among inner city children who are chronically exposed to these agents. Other contributors to higher rates in inner city areas include less access to appropriate health care resulting in inadequate preventive care for asthma management, and a lack of asthma knowledge and management skills among families and primary health care providers.

Objective 1 - By 2010, reduce asthma morbidity as measured by a reduction in the asthma hospitalization rate for children ages 0 to 14 to no more than 25 per 10,000. (Maryland Baseline: 32 per 10,000 in 1997)

Action Steps

- ⇨ Implement a multi-media campaign to raise public awareness, understanding, and preventative measures for asthma and asthma triggers for children.
- ⇨ Distribute copies of updated National Institute of Health (NIH)/National Asthma Education and Prevention Program (NAEPP) asthma guidelines to Maryland primary health providers involved with children.

- ⇨ Work with the American Academy of Pediatrics and other groups to assess and monitor use of NIH asthma management guidelines by providers. Promote the use of the NIH asthma guidelines for children.

- ⇨ Implement school-based asthma education programs to educate patients, families and schools to better manage asthma according to current guidelines. Target school-based and other educational programs to communities at highest risk.

- ⇨ Convene a strategic planning group to design and implement a statewide asthma surveillance system.

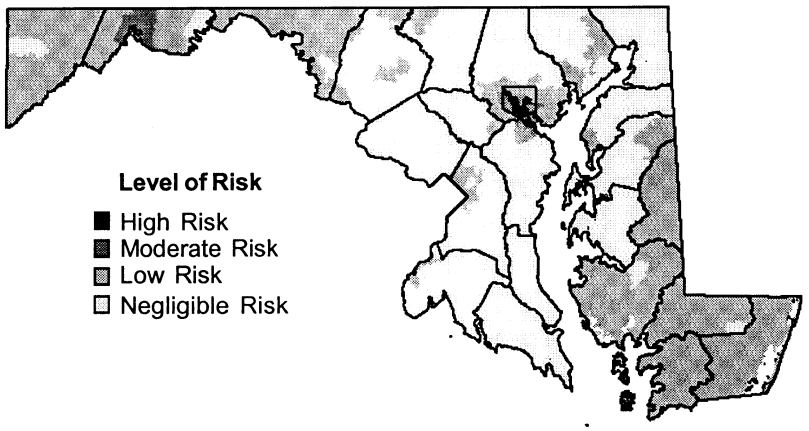
- ⇨ Promote coordination and partnership among the organizations and systems that address the causes, prevention, and management of asthma in children.

Focus Area 2 - Preventing Childhood Lead Poisoning

Problem

Lead is a biochemical poison that affects a number of organ systems, including the central nervous system. Sustained exposure to lead can cause long lasting neurological damage, learning disabilities, shortened attention span, behavior problems, growth delays in young children and lowered IQ. Children absorb more lead and are more sensitive to its effects than adults. A report released by the Maryland Department of the Environment (MDE) in January of 2000 shows that childhood lead poisoning (defined as a venous or capillary blood lead level greater than or equal to 20 ug/dL) is a serious, but preventable health problem that affected 772 Maryland children in 1998 alone. An additional 4,300 children were diagnosed with elevated blood lead levels (defined as a venous or capillary blood lead level greater than or equal to 10 ug/dL).

Predicted Areas of Risk for Lead Poisoning For Children under 6 Years of Age Based on the Maryland Model (1999)



Source: 1990 U.S. Census Bureau Data and 1994-1996 MDE Lead Registry Data
Note: Census tract risks were converted to zip code risks using weighted proportional averages.

Screening children for lead poisoning will remain an essential activity until the goal of primary prevention is achieved (eliminating hazards so that children are no longer exposed to lead). Diagnosis and subsequent treatment is best accomplished by screening children with a blood lead test. However, few Maryland children are currently being screened. The 2000 MDE report also shows that in 1998, 13.9% of Maryland children under age six were tested for lead poisoning. Screening rates varied by jurisdiction from a high of 31.2% in Baltimore City to a low of 4.1% in St. Mary's County. Approximately 10% (5,068) of Maryland children tested for lead poisoning were found to have elevated blood lead levels.

Major Determinants

Poverty and residence (or child care) in homes with deteriorated or disturbed lead-based paint are major risk factors for lead exposure and poisoning. Ingestion of lead primarily occurs among young children exposed to chipped and peeling lead-based paint on windowsills and porches in homes built before 1978. Children are at greatest risk from birth to age six. According to the 1990 U.S. Census, there are about 529,000 Maryland homes built before 1950 (95% likely to contain lead paint) and 976,000 homes built between 1950 and 1978 (75% likely to contain lead paint). Therefore, more than 1.2 million Maryland homes are potential sources of lead exposure.

Health Disparities

Poor children living in substandard housing with chipped and peeling lead-based paint and located in areas with older housing stock are more likely to have elevated blood lead levels than their counterparts. In 1998, more than 80% of children in the State found to be lead-poisoned lived in Baltimore City.

Legislation passed during the 1998 Maryland General Assembly Session required DHMH to develop a methodology for identifying areas of high risk for childhood lead poisoning in Maryland. As a result a *Targeting Plan for Areas of High Risk for Childhood Lead Poisoning* was developed by DHMH in 2000. This *Targeting Plan* defines 46 census tracts in the State to be at "high risk" for elevated blood levels among children under age six. All 46 of the "high risk" census tracts are located in Baltimore City. The Eastern Shore and Western Maryland also have significant concentrations of areas of risk for childhood lead poisoning.

Objective 1 - By 2010, increase screening of children under the age of six by blood lead tests in areas of high risk for childhood lead poisoning to 100%. (Maryland Baseline: 13.9% screened statewide in 1998; 31.2% screened in Baltimore City in 1998)

Objective 2 - By 2010, eliminate elevated blood lead levels in children. (Maryland Baseline: approximately 10% of children screened in 1998)

Action Steps

- ⇨ Assist families and providers with identifying and assessing resources and services for lead abatement.
- ⇨ Develop a culturally competent statewide campaign to raise general public awareness about lead hazards and the importance of timely screening for lead poisoning in young children.
- ⇨ Improve outreach and screening for elevated blood lead in children under age six.
- ⇨ Promote universal venous blood testing for lead at 12 and 24 months of age in areas of low, moderate, and high risk as defined in the DHMH childhood lead targeting plan. Assess risk for lead exposure, by questionnaire, in areas of negligible risk as defined in the DHMH childhood lead screening targeting plan.
- ⇨ Increase health care provider education to help minimize confusion about federal and state guidelines regarding lead screening testing requirements and recommendations.
- ⇨ Promote coordination and collaboration among organizations and systems working to prevent lead poisoning among children.

Focus Area 3 - Promoting Good Nutrition and Physical Activity in Children

Problem

Good nutrition and physical activity are essential for optimal growth and development, health, and well-being. In the late 1990s, results of several studies indicated that children and youth are eating less well-balanced diets and becoming more sedentary. This has resulted in greater numbers of overweight youth and youth who exhibit early signs of nutritional imbalance such as diabetes, high cholesterol levels, and hypertension. Data from the CDC show that the percentage of children and adolescents who are overweight more than doubled between 1970 and 2000. About 12.5% of U.S. young people age 6 to 17 years are seriously overweight. Obese children are more likely to become obese adults. Overweight adults are at increased risk for heart disease, high blood pressure, stroke, diabetes, some types of cancer, and gallbladder disease.

Dietary factors contribute substantially to preventable illness and premature death in the United States. Four of the ten leading causes of death—coronary heart disease, stroke, some types of cancer, and type 2 diabetes—are associated with dietary factors. The establishment of healthy nutritional patterns and behaviors should start during childhood and be maintained throughout the life cycle. The 1995 *Dietary Guidelines for Americans* recommend that persons age two years and older should eat a variety of foods, maintain or improve body weight by balancing food intake with physical activity; and choose a diet that is plentiful in grain products, vegetables, and fruits; moderate in salt, sodium, and sugars; and low in fat and cholesterol.

Physical activity among children and adolescents is important because of the related health benefits (cardiorespiratory function, blood pressure control, and weight management) and because a physically active lifestyle adopted early in life may continue into adulthood. Many children are less physically active than recommended, and physical activity declines during adolescence. Data from the Third National Health and Nutrition Examination Survey for 1988-1994 document that one quarter of U.S. children spend four hours or more watching television daily. These findings highlight the need for parents, educators, and health care providers to become positive role models and to be involved actively in the promotion of physical activity and fitness in children and adolescents.

Health Disparities

Overweight and obesity are multi-factorial in origin, reflecting inherited, metabolic, behavioral, environmental, cultural, and socio-economic conditions. They are particularly prevalent in minority populations, especially among minority females. The percentage of the population reporting no leisure-time physical activity is higher among women (43%) than men (36%), among African-Americans (52%) and Hispanics (54%) than whites (38%), and among high school graduates (46%) than college graduates (24%).

Objective 1 - By 2010, reduce the prevalence of overweight and obesity among children and adolescents. (U.S. baseline: 11% of 6-19 year olds in 1988-94; 2010 target: 5%; No baseline data for Maryland)

Objective 2 - By 2010, increase to at least 30% the proportion of school-aged children and adolescents who engage in moderate physical activity for at least 30 minutes on five or more of the previous seven days. (U.S. Baseline: 21% of young people in grades nine through 12 in 1995; No baseline data for Maryland)

Action Steps

- ⇨ Develop a culturally-competent statewide campaign to promote healthy nutritional habits among children, adolescents, and families. Promote the findings from the 1995 report on dietary guidelines for Americans. Target communities at highest risk.

- ⇨ Develop a statewide campaign that promotes the importance of physical activity among children and adolescents and discourages sedentary activities.

- ⇨ Provide educational opportunities for all school system personnel to become knowledgeable about meals and snacks that are age-appropriate.

- ⇨ Collaborate with local school systems in the development of nutritionally well-balanced meals and snacks in the school setting.

- ⇨ Collaborate with local school systems to increase the participation of students in regular physical education activities in schools.

Focus Area 4 - Improving Access to Health Care for Adolescents

Problem

Adolescence, the transition from childhood to adulthood, is a complex period of accelerated growth and change characterized by numerous physical, cognitive, social, and emotional changes. Adolescence is a period of experimentation and risk-taking. There are more than 525,000 adolescents, between the ages of 12 and 19, in Maryland. Another 144,000 children, between the ages of 10 and 11, comprise the pre-adolescent group.

Adolescent health issues are primarily psycho-social rather than physical. Unintended pregnancy, sexually transmitted diseases, depression, violence, and substance abuse are some of the health problems faced by increasing numbers of adolescents from all segments of society. For example, national data indicate that up to 30% of adolescents suffer from depression and rates of several sexually transmitted infections are higher among adolescents than any other age group. Approximately 75% of adolescent deaths are caused by preventable social morbidities: unintentional injuries, homicide, and suicide. Health beliefs, attitudes and behaviors acquired during adolescence set the stage for health-related behaviors in later life.

Estimated Numbers of Adolescents, ages 10-19, in Maryland by Region, 1997

Region	Number	Percent
Total	676,440	100.0%
Western Maryland	56,320	8.3%
Baltimore Metro Area	321,610	52.6%
National Capital Area	206,800	30.6%
Southern Maryland	41,350	6.1%
Eastern Shore	50,450	7.4%

Source: *Maryland Vital Statistics Annual Report, 1997. Table 4.*

Historically, adolescents have used fewer primary care services as compared to all other age groups in the U.S. A lack of health insurance coverage often served as a major barrier to care. In 1998, the U.S. Census Bureau's Current Population Survey estimated that 16% of adolescents between the ages of 12 and 17 were uninsured. Until the advent of the Maryland Children's Health Program (MCHP), many low-income adolescents lacked access to health insurance coverage. Other barriers to access to care for adolescents include: 1) lack of a "medical home"; 2) lack of service delivery systems designed to address the unique needs of adolescents; 3) a shortage of providers trained in adolescent health; and 4) a lack of family involvement. There is a need to create "adolescent friendly" systems of care that include programs that are developmentally and culturally appropriate and staffed by health professionals who are skilled in the unique health needs of adolescents.

Parents and caregivers play a crucial role in ensuring that adolescents access health care in a consistent and appropriate manner. Throughout the teen years, children are dependent on adults to ensure health care coverage, make and keep appointments, and follow primary regimens.

MCHP provides health insurance for adolescents in families with incomes under 300% of the poverty level who are not eligible for Medicaid. Yet, there are some families that are eligible for neither public or private forms of health insurance coverage. It is important for parents/care givers to receive outreach and information services and to be informed of the available resources and the appropriate manner in which to access services.

In the past, many adolescents received primary and other health care services at local health departments at reduced or no cost. These services often served as an important source of care for uninsured or underinsured adolescents. As fewer direct and "gap-filling" services are provided by local health departments, adolescents will need other appropriate sources of care.

Health Disparities

African-American, American Indian, and Hispanic adolescents were more likely to be poor than white or Asian adolescents according to data from the 1990 U.S. Census for Maryland. Poverty correlates with lessened access to and use of health care insurance and services. According to the 1998 Current Population Survey, Hispanic, African-American and Asian children (ages 0 to 17) were more likely to be uninsured than white children.

Objective 1 - By 2010, increase the proportion of adolescents with health insurance coverage to 100%. (U.S. Baseline: 16% of adolescents between the ages of 12 and 17 were uninsured in 1998; No baseline data for Maryland)

Objective 2 - By 2010, increase to at least 95% the proportion of children and adolescents who have a designated medical home. (Baseline: developmental)

Action Steps

- ⇨ Develop a methodology to estimate the number of uninsured adolescents in Maryland.
- ⇨ Increase the number of health professionals trained to provide adolescent-oriented health services.
- ⇨ Develop "adolescent-oriented" service systems within each region of the State to address the unique needs of adolescents.
- ⇨ Expand outreach and education programs to improve awareness of available public health insurance programs for adolescents and increase enrollment. Educate parents/caregivers and adolescents in accessing various health programs and services (enrollment procedures, etc.).
- ⇨ Coordinate outreach and support efforts of MCHP to improve access to health care for adolescents.

Focus Area 5 - Improving the Service System for Children with Special Health Care Needs (CSHCN)

Problem

Children with special health care needs (CSHCN) are defined as children who have or are at risk for a chronic physical, developmental, behavioral, or emotional condition and who require health care. Approximately 171,000 children in Maryland have serious, ongoing physical health conditions. According to the 1994-95 Disability Survey conducted by the National Center for Health Statistics, approximately 15-18% of the child and adolescent population has special health care needs. While all special needs children have the same concerns as other children, special needs children also have unique health issues that must be addressed.

Estimated Numbers of Children with Special Health Care Needs by Region

Region	Number	Percent
Total	183,644	100.0%
Western Maryland	14,398	7.8%
Baltimore Metro Area	91,707	49.9%
National Capital Area	57,084	31.1%
Southern Maryland	10,497	5.7%
Eastern Shore	9,958	5.4%

Source: Ireys, Henry and Kenneth Kolodner. (1997, November). *Estimating the State and County Prevalence of Children with Special Health Care Needs: A Technical Study for the Children's Medical Services Program. November, 1997.* Estimates derived from national data available through the Childhood Disability Supplement of the 1994-95 National Health Interview Survey.

Children with special health care needs and their families often require a range of specialized health and health-related services. These include preventive, primary and specialty medical services; specialized diagnostic and therapeutic services; rehabilitation services; early intervention services; and enabling services such as transportation and family support. Historically, services for special needs children have been difficult for families to access and for providers to coordinate. A lack of knowledge of comprehensive needs and corresponding community-based resources and payment mechanisms present challenges for both families and providers.

A 1998 analysis of Maryland's health care delivery system for special needs children prepared for the Office of Children's Health identified the following as major gaps and needs:

- Limited access to specialty care services, particularly in some rural areas.
- Limited access to enabling and family support services such as respite care, child care, and transportation.
- Barriers to care that include differing eligibility criteria, duplication and gaps in services, inflexible funding sources, and poor coordination among service sectors.

Objective 1 - By 2010, increase the proportion of local and/or regional areas in Maryland that have comprehensive service systems that include population-based, enabling, direct, and infrastructure-building activities to improve the health and well-being of children with special health care needs. (Maryland baseline: developmental)

Action Steps

- ⇨ Assess community and regional needs including the identification of children with special health care needs and providers of health and health-related services for special needs children.
- ⇨ Promote partnerships and linkages with families, providers, and other stakeholders for special needs children programs and services.
- ⇨ Develop clinical and service guidelines to monitor, track, and evaluate the quality of health care services for special needs children and their families.
- ⇨ Provide appropriate data and information necessary for planning and policy development at the state and local levels.
- ⇨ Enhance and expand the health and health-related services network for special needs children.
- ⇨ Promote training and provide information and education to families, providers, and staff regarding management, care, and services for special needs children and their families.
- ⇨ Facilitate the transitioning of adolescents as they age out of public programs to other sources of care.
- ⇨ Maximize coordination with and among existing federal, state, and local programs offering services for special needs children.

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Cross-Reference Table for Child and Adolescent Health

See Also